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The influence of learning on attitudinal change: a cross cultural analysis of green computing

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Abstract: Computers today are an integral part of individuals' lives all around the world; but unfortunately these devices are toxic to the environment given the materials used, their limited battery life and technological obsolescence. Hence, the purpose of this study was to cross-culturally assess the green computing habits of consumers and determine if attitudes would change when confronted with information regarding their toxicity. The three countries under study include the US, a developed country, Romania, a transitioning economy and Bangladesh, a Least Developed Country (LDC). Findings of a survey conducted indicate that green computing habits in Romania and Bangladesh are similar to those in the US. Specifically, results support previous research and showed that across cultures, individuals are concerned about the hazardous materials ever present in computers, even if the importance of various attributes differs, and that a more environment-friendly attitude can be obtained through exposure to educational materials. Across all three countries there were several green computing attributes that were important to all which included: putting the computer in sleep mode, wishing the computers were recyclable or were made with recycled parts, turning off the computer when not in use and desiring that organizations provide free e-waste disposal. When prospecting the computer market, respondents in the US and Romania report looking for power saving features. Respondents in Bangladesh and Romania also show interest in having more information about the production process and its impact on the environment, such as the amount of greenhouse emissions. Those in Bangladesh and the US think that companies should reduce packaging for computers.

Keywords: green computing, E-waste, environmentalism, green marketing, cross cultural.

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1. Introduction

Computers are an integral part of our lives for work, entertainment and communication. Not just computers but also the billions of smart phones, plasma and smart TVs that are an essential part of living in the 21st century. Further, given the state of technology, newer and faster computers in the form of notebooks, tablets and e-readers, are introduced annually as companies rush to gain market share and improve their margins. Such a star-studded aura surrounding the newest and fastest gadgets positively influences attitudes toward a limited use of electronics and creating a haven for toxic waste (Seitz et al., 2013). Especially in the US where the retail cost of highly technical products is relatively low, the purchase and growth of e-waste has become a major issue (Seitz et al., 2010). According to Renckens (2008) the US accounts for 25 percent of the total computers sold, and in the case of mobile phones the percentage is even greater. Smartphone sales passed one billion in 2013 and represented 55 percent of all mobile phone sales worldwide (Arthur, 2014). This is in line with what Cooper (2004) and McCollough (2009) have termed the "throwaway society": research (McCollough, 2009; Lucsko, 2008) has shown that repair shops are giving way to a disposable society with over 300 million computers and over 100 million cell phones thrown away in 2005 alone (Seitz et al., 2010).

The European Union has established guidelines for the computers' end of life (EOL) making manufacturers responsible for the implementation of measures during and after the sale to ensure that their products are sold and then collected, deposited or recycled so as to reduce their impact on the environment. However, the same enthusiasm has not been manifested in the US. According to Dreher and Pulver (2008), the US position allows developing countries that have the capabilities to deal with e-waste, handle it as "equals" in trade, fostering economic growth. With much of the e-waste making its way to China and other emerging nations, and with little oversight in the name of market development, evidence shows that the results are devastating for the individuals handling the waste in those countries. China has seen more than 200 tons of e-waste smuggled into the country with most of it managed inappropriately (Seitz et al., 2013). Hence, the Chinese government is developing policies to "redesign" how e-waste is handled (Liu et al., 2009).

Bangladesh is also developing policies to handle e-waste as well as other hazardous materials. After an outcry by the people in 1989 regarding hazardous wastes being dumped in their country, the government became a signatory of the Basel Convention in 1992 (Esty, 2006). Since then Bangladesh, an LDC, has been struggling to move its economy forward fighting against the massive poverty and high illiteracy rates that continue to plague the country. In 2010, it amended the 1995 law concerning environmental protection and the new Environment Protection Bill hardens the penalties for environmental damage and empowers local communities and individuals to file complaints signaling any pollution activity and to seek compensation (Rahman, 2010). However, an unstable government where corruption is the norm jeopardizes

the effectiveness of any environmental policies resulting in a world ranking of 169 out of 178 countries according to the Environmental Protection Index measured by Yale University (Yale, 2014). Moreover, an environmental report of the country's industry revealed that most companies failed to recognize the importance of environmental stewardship due to the lack of clearly articulated guidelines and policies (Akhtar, 2009).

Europe's strong stance on the environment has strong support from its newest member states in Eastern and Central Europe. These transitioning economies are in the process of transferring legislation and incorporating EU policies. In the 1990's many of these countries were encouraged by the EU to implement environmental action programs, with some receiving technical support to adopt new policies.

In 2007, Romania became a member of the EU and is now implementing the directives, policies and procedures for governance and the environment. However, the country has a long history of environmental protection legislation. In 1973 Romania adopted its first environmental legislation in response to a growing concern for these issues. During the communist era the environmental policy dictated that any project should take into account the protection and preservation of the environment. As a result of its EU membership, Romania has developed a National Strategy for Sustainable Development for 2013–2020–2030 which set out the following priorities: climate change and clean energy, sustainable consumption and waste management, conservation and management of natural resources. However, as noted by Cherp (2001), there is still a gap between legislation and practice. Particularly, in the reduction of e-waste, Romania is working to set up the infrastructure to facilitate these directives that closely mirror those established by the EU (Ionescu, 2009). However, as public awareness of environmental standards has increased, companies have grown more compliant with environmental standards and regulations (idem). Currently, Romania is situated on the 85th place out of 189 countries according to its Environmental Performance Index, having great scores for health impacts and forests and needing to improve its management of fisheries and water resources (Yale, 2014).

Thus, we have a country like US, ranked 33rd, Romania, in the middle of the ranks and Bangladesh, towards the bottom of the list and we ask ourselves whether attitudes toward green computing differ greatly across cultures. Consequently, the purpose of this study is to determine the influence of learning on attitude change toward green computing cross-culturally in the US, Romania, and Bangladesh. Specifically, the objectives of the study are to: (a) determine consumers' attitudes towards green computing; and (b) determine the changes in consumers' attitudes regarding green computing when additional information is presented.

This study is important because stakeholders, and especially consumers, can exert pressure on companies in favor of the adoption of eco-friendly practices (Nishitani, 2010) by sanctioning wrongdoings through consumer boycotts, protests etc. Moreover, McDougal (1993) states that consumer environmental

knowledge is the key to driving the green movement. According to Laroche et al. (2002) knowledge is the key to forming environmentally proactive attitudes, with attitudes being the underlying predictors of ecological purchases. Attitudes form the foundation for social behavior and are determined by an individual's motives (Katz, 1960). They have three components: the cognitive or knowledge component, the affective or feeling component and finally the behavioral component. By understanding consumers' attitudes toward green computing, marketers can develop messages and products that support a healthy relationship to the environment (Seitz et al., 2013).

People form an attitude in several different ways depending on the particular hierarchy of effects that is operating. The ways we learn include classical conditioning, instrumental conditioning or learning, the results of very complex cognitive processes. In the current study, attitude formation is based on learning, and in cognitive learning theory people are seen as problem solvers who actively use information from the world around them that matters to their current orientation in the environment. Although this sensation/ information lasts only a few seconds, it is sufficient to allow the person to consider whether he should investigate further. If they retain this information for further processing, it transfers to short-term memory. Hence, short-term memory holds the information while additional information from long-term memory is evaluated in light of this new information. Then a cognitive process called elaborative rehearsal allows information to move from short-term to long-term given the meaning of the stimulus and relating it to already established attitudes (Seitz et al., 2013).

In changing consumers' attitudes regarding green computing it is critical to understand how additional information plays in changing existing attitudes. Social judgment theory suggests that an individual's initial frame of reference acts as a conduit in how consumers assimilate new information regarding existing practices (Meyer-Levy and Sternthal, 1993). For example, if the individual has a positive attitude towards the environment or believes it is a good thing to take care of the environment as viewed by society, it can be hypothesized that when the respondent reads the information brief regarding the toxicity of computers and technological obsolescence, this will trigger their favorable position regarding the environment. After processing, the final verdict that is rehearsed to their long-term memory (the new information) would change their attitudes and thus their responses would differ after reading the given information. Hence, the researchers hypothesized that once presented with information regarding the toxicity of computers and e-waste that consumers' attitudes would significantly change to be more environmentally conscious regarding use and purchase of them (Seitz et al., 2013).

2. Research methodology

This study reports on the findings of surveys conducted with convenience samples formed of business students from universities in Southern California, US, Iasi, Romania and Dhaka, Bangladesh. A self-administered questionnaire

was developed in English to ascertain the following information: (1) attitudes regarding green computing habits and purchases, (2) attitudes toward e-waste disposal, and (3) demographic characteristics. To determine the impact of information on attitude change the researchers developed an informational brief regarding the toxicity of computers and technological obsolescence titled "Your Computer... Did You Know." This was inserted into the instrument followed by the same series of statements regarding attitudes regarding green computing habits and purchases (Seitz et al., 2010).

To measure attitudes towards green computing the scale developed by Schwepker and Cornwell (1991) was modified and used in the final instrument (Seitz et al., 2010). The original scale consisted of a total of 14 statements regarding litter, solid waste disposal, and solid waste reduction in packaging. Some statements were adapted to reflect the nature of computer waste and green computing habits. Further, statements were developed based on the literature regarding computer toxicity and included "I put my computer into sleep mode to save energy when it's not in use", "computers should be made with recycled parts", "computers are toxic to the environment", "organizations need to have a policy to dispose computers properly", "a company should provide free e-waste disposal and recycle programs", "power saving features are important to me when looking for a computer", and "when shopping for a new computer, its carbon footprint is important to me". The final scale consisted of 15 statements that was measured using a five point Likert scale ranging from strongly agree (5) to strongly disagree (1). This final scale was replicated and used after the informational brief on computer toxicity. (Seitz et al., 2010)

To measure e-waste disposal three closed-ended questions were developed. The first question was regarding the best option for e-waste disposal. Four responses were identified from the literature and included "ship back to manufacturer", "take to a local charity for reuse", "take to a computer retailer", take to a recycling center", and "take to a collection event." The second question asked respondents what they thought happened to their computers after they disposed of it. Again, five responses were given and included "sent to a landfill", "valuable metals are extracted", "equipment is sold", and "recycled in another country." The third close-ended question asked respondents why it was important to keep e-waste out of landfills. Five responses were given and included "fills up landfills too fast", "hazardous substances leach into waterways", "dangerous to humans and animal health", "wastes precious metals such as copper and gold", and "it's not important to keep e-waste out of landfills." Finally, based on the literature reviewed demographic characteristics were sought and included age, gender, ethnicity, annual income, and marital status (Seitz et al., 2010).

3. Cross cultural analysis of green computing attitudes

In the US, two hundred and fifty-seven respondents completed the survey. Regarding gender the majority were female (64.2%), single (50.2%) with an

annual income of less than $20,000 (27.6%). Regarding ethnicity, over half (52.1%) were White, followed by Hispanic (21.4%) and Asian (10.2%) (Seitz et al., 2013). In Romania, one hundred and forty-eight respondents completed the survey. Regarding gender the majority were female (67%), single (84.4%) with an annual income of less than $20,000 (78.4%). Regarding ethnicity, the majority (88.5%) were White (Mihai et al., 2013). In Bangaldesh, one hundred and eighty-three respondents completed the survey. The majority were White (87%), male (74%), single (92.3%) with an annual income of less than $20,000 (44%).

Table 1. *Green computing habits prior to informational brief*

Item	US	Romania	Bangladesh
When shopping for a new computer, its carbon footprint is important to me.	3.24	2.94	3.39
I wish my computer was recyclable.	4.09	3.76	3.82
I put my computer into sleep mode to save energy when it's not in use.	3.68	3.61	3.80
I turn off my computer off when it's not in use.	3.97	4.09	3.91
Computers should be made with recyclable parts.	4.17	3.91	3.92
Upgrading my current computer is important to me in becoming greener	3.40	3.36	3.58
I look for computers that use less energy when shopping for a new computer.	3.59	3.37	3.59
Computers are toxic to the environment.	3.48	3.23	3.22
Organizations need to have a policy to dispose of computers properly.	4.22	3.59	3.91
It is important to me that companies reduce packaging for their computers.	3.97	3.19	3.61
Powers saving features are important to me when looking for a computer.	3.86	3.51	3.87
A company should provide free e-waste disposal and recycle programs.	4.14	3.91	3.86
Companies should provide details on the greenhouse emissions, energy efficiency, restricted substances, and material efficiency for its packaging.	3.96	3.97	4.03
I look for eco-friendly batteries for my laptop.	3.29	3.38	3.70
I use eco-friendly batteries for my laptop.	3.04	3.03	3.34

Source: based on Seitz et al. (2013) and Mihai et al. (2013).

Most US respondents agreed and strongly agreed with statements regarding sleep mode usage (68.9%), desirability of recyclable computers (79.8%), turning off the computer when not in use (76.3%), desirability of computers made from recyclable parts (86%), organizational policies for proper computer disposal (87.9%), reduced packaging (77.4%), power saving features (70.8%), and thought that companies should provide free e-waste disposal and recycle programs (84.4%). Approximately 38% of the respondents agreed that computers represent a threat to environmental preservation, while 34% had no definite opinion on the matter. Regarding whether a computer's carbon footprint was important when shopping for one, most respondents were either neutral (34.6%) or in agreement (35.4%). The response was similar for upgrading computers to become greener (34.6% neutral; 31.9% agreed) and for the statement regarding looking for computers that use less energy when

shopping (26.5% neutral; 40.1% agreed). Regarding battery use, 51 percent were neutral regarding the use of eco-friendly batteries. In terms of disposing of e-waste, most respondents felt the best option was to take the item to a recycling center (47.1%), but 30.4 percent thought that computers end up in landfills instead, whereas 23 percent believed that the metals were extracted. Almost half (49.8%) noted that it was important to keep e-waste out of landfills because hazardous substances leach into waterways while (31.5%) felt it was dangerous to human and animal health (Seitz, et al., 2013).

Romanian respondents agreed and strongly agreed with statements regarding sleep mode usage (66.2%), desirability of recyclable computers (67.6%), turning off the computer when not in use (68.9%), believed that companies should provide details on greenhouse emissions and energy efficiency (76.3%), thought that companies should provide free e-waste disposal and recycle programs (70.2%), and looked for power saving features when buying a computer (55.4%). Almost half (48.7 % and 48.9% respectfully) agreed that upgrading computers was important to become greener as well as looking for computers that used less energy. Regarding computers' toxicity to the environment, approximately 40 percent were neutral while 37 percent agreed with this statement. Regarding whether a computer's carbon footprint was important when shopping for one, half (50%) of the respondents were neutral. Regarding battery use, 38 percent were neutral regarding the use of eco-friendly batteries and 34 percent were neutral regarding looking for eco-friendly batteries. Regarding attitudes towards disposing of e-waste most respondents felt the best options were to take the item to a recycling center (35.8%) or to a computer retailer (35.1%). Most respondents (48.6%) thought that computers were recycled in another country (37.2%). Over one third (37.8%) noted that it was important to keep e-waste out of landfills because hazardous substances leach into waterways while (32.4%) stated that it wastes precious metals such as copper and gold (Mihai et al., 2013),

Regarding the attitudes toward green computing of Bangladeshi respondents, most agreed and strongly agreed with statements regarding putting their computer into sleep mode (66.7%), wished their computer was recyclable (65.5%), turned their computer off when not in use (68.8%), thought they should be made with recycled parts (67.2%), believed that companies should provide details on greenhouse emissions and energy efficiency (76.5%), as well as reduce packaging for their computers (68.8%), thought that companies should provide free e-waste disposal and recycle programs (72.1%), and looked for power saving features when buying a computer (68.3%). Regarding computers toxicity to the environment, approximately 34 percent were neutral while 42 percent agreed with this statement. Regarding whether a computer's carbon footprint was important when shopping approximately 47 percent agreed or strongly agreed while 57 percent agreed that upgrading computers was important to becoming greener. Similarly, approximately 57 percent agreed that they looked for computers that use less energy and eco-friendly batteries (57.4%) when shopping. Forty-four percent agreed that they

used eco-friendly batteries. Regarding the attitudes towards disposing of e-waste most respondents felt that the best options were to take the item to a recycling center (38.8%) or ship it back to the manufacturer (25.7%). Most respondents (33.3%) thought that the equipment was sold or that the valuable metals were extracted (28.4%). Over one-third (36.1%) noted that it was important to keep e-waste out of landfills because of the danger to human and animal health followed by hazardous substances leaking into waterways (30.6%).

In order to gauge the impact on attitudes of the informational brief, paired T-tests were conducted on each of the statements in the scale regarding attitudes toward green computing before and after reading the informational brief on computer toxicity. The results presented in Table 2 show that Romanians were very receptive to the informational package and registered higher variations in their attitudes towards green computing in comparison to the US and Bangladeshi respondents.

Table 2. *Degree of attitudinal change after reading the informational brief*

Item	US	Romania	Bangladesh
When shopping for a new computer, its carbon footprint is important to me.	+13%**	+70%**	+9%**
I wish my computer was recyclable.	+3%**	+11%**	+1%
Computers should be made with recyclable parts.	+1%	0%	-2%
Upgrading my current computer is important to my intention to become greener.	+7%**	+20%*	+3%
I look for computers that use less energy when shopping for a new computer.	+6%**	+7%*	+6%*
Computers are toxic to the environment.	+14%**	+8%**	+9%**
Organizations need to have a policy to dispose of computers properly.	+2%*	+9%**	-3%
It is important to me that companies reduce packaging for their computers.	+3%**	+29%**	+2%
Powers saving features are important to me when looking for a computer.	+2%	+4%	+5%*
Companies should provide free e-waste disposal and recycling programs.	+1%	-14%**	+1%
Companies should provide details on the greenhouse emissions, energy efficiency, restricted substances, and material efficiency for their packaging.	+3%**	-17%**	-2%
I look for eco-friendly batteries for my laptop.	+6%**	-21%**	+1%

Note: Results based on t-tests of the two attitudinal scores obtained before and after reading the informational brief; ** $p<0.01$ and * $p<0.05$.

For the US sample, the results show significant differences at the $p < .05$ level for nine of the twelve statements. In all, respondents were more in agreement with the statements after reading the informational brief. Means increased for all the statements following the informational brief with the majority increasing significantly. Hence, the hypothesis was supported in the research (Seitz et al., 2013).

For the Romanian sample, the results show significant differences at the $p < .05$ level for ten of the twelve statements. Means increased significantly suggesting greater agreement for statements regarding the importance of

carbon footprint when shopping for a computer; wanting computers made with recycled parts, upgrading computers to be greener; looking for computers that use less energy; computers are toxic; and organizations need to have policies to dispose of computers properly and reduce packaging. However, means decreased significantly suggesting less agreement regarding the fact that companies should provide free-waste disposal and recycle programs and that they should provide details on greenhouse emissions and energy efficiency. The respondents also admitted losing interested in searching for eco-friendly batteries for their laptops. Hence, the hypothesis was partially supported in the research (Mihai et al., 2013).

For the Bangladeshi sample, the results show significant differences for four of the twelve statements. Means increased significantly suggesting a greater agreement with those statements that have a direct relation to a more responsible consumer behavior: taking into consideration the carbon footprint, power saving features and energy efficiency when shopping for a computer, and to the fact that, on a whole, computers are toxic to the environment. Means did not change significantly for eight of the statements suggesting minimal support for the hypothesis.

4. Conclusions and further research

The results support previous research and show that across cultures, individuals are concerned about the hazardous materials ever present in computer, even if the importance of various attributes differed. Across all three countries there were several green computing attributes that were important to all which included: putting the computer in sleep mode, wishing the computers were recyclable or were made with recycled parts, turning off the computer when not in use and desiring that organizations provide free e-waste disposal. Respondents in the US and Romania reported looking for power saving features when looking for computers. Respondents in Bangladesh and Romania desired companies to reveal information about the computer such as greenhouse emissions. Those in Bangladesh and the US thought that companies should reduce packaging for computers. The attributes that respondents considered less important and in many cases were neutral towards about among the three countries related to looking for and using eco-friendly batteries and the carbon footprint of computers.

Regarding the place computers end up after they are thrown away by consumers, respondents in all three countries indicated that they are taken to a recycling center first and foremost. Respondents in Romania also indicated that e-waste, such as computers, were returned to the retailer, while those in Bangladesh indicated that they thought the e-waste was returned to manufacturers. Across the three countries respondents stated that it was important to keep e-waste out of landfills because of the danger to human and animal life and that the toxins contaminate the water system.

According to Esty (2006) wealth and development drive the environmental performance of nations. The results of our cross cultural research suggest that

concerns for environment are prevalent throughout the world; however, attitudes and behavior vary in intensity and content. The hypothesis that attitudes toward green computing would change positively in a significant manner after reading the informational brief was supported in the US and partially in Romania. The results from respondents in Bangladesh minimally supported the hypothesis. Although significant differences were found among common attributes such as the carbon foot print of computers, computers' toxicity and looking for computers that use less energy, US and Romanian respondents had similar attributes of significance suggesting similar understanding of and attitudes toward green computing. In the US and Romanian studies significant differences were found for wishing computers were recyclable, upgrading is important to being greener, companies need to reduce computer packaging, provide free e-waste disposal, provide greenhouse emission standards and energy ratings and have policies to dispose of e-waste safely.

There are several implications of our findings. First and foremost, consumers need to be educated regarding the toxicity of computers and the problems of e-waste. The results of our study suggest that when presented with information consumers positive attitudes toward green computing increased significantly in the case of some statements in all three countries. This education would best be carried out by public policy holders, educational institutions and various non-profit agencies such as the Green Electronics Council on a prolonged basis to initiate attitude change.

In 2001, the Western Electronic Product Stewardship Initiative (WEPSI) proposed developing environmental assessment criteria of electronics as a means to direct governments and other entities into environmentally better purchasing decisions. The EPEAT system is used in at least eight nations including the US and Canada and is used to identify environmentally friendly electronics (Unknown author, 2007); however, expansion of this system is needed in more countries as the proliferation of e-waste continues. In this system electronics are evaluated based such criteria as reduction of harmful materials, recyclability, energy conservation, corporate performance, end-of-life (EOL) management, and product longevity. EPEAT registered computers have reduced levels of toxic metals, are energy efficient and are easy to upgrade and recycle.

Although many manufacturers subscribe to the EPEAT system, getting the message to consumers is not a stroll in the park. Findings show that across cultures consumers are proactive regarding energy savings; however, regarding other components of computers, such as batteries and materials, they lack the knowledge necessary to make informed choices. Marketing can play a vital role in increasing favorable attitudes towards green computing and prompting sustainable development of computers and other similar devices minimizing their impact on the environment (Danciu, 2013) while satisfying consumers' needs and wants. Depending on the country the role of government in moderating consumer purchasing behavior of green computers and other

electronics through educational materials could be perceived both positively and negatively.

Electronics manufacturers must realize that consumers in developing nations are environmentally conscious and desire access to eco-friendly computer products and accessories (Mihai et al., 2013). Hence, manufacturers that subscribe to EPEAT should develop labeling and symbols that are incorporated into packaging and product design to further communicate their support of green computing initiatives such as EOL. Further, these manufacturers should communicate this distinction as a point of brand differentiation when developing advertising messages. Until now, differentiation among computer manufacturers has been based on after-sale service, brand reputation, speed, and technological capabilities. Additionally, product strategies should include educational seminars provided to resellers in the form of employee trainings so that they are better able to communicate the features and benefits of "green" computer brands and models to consumers in developed, transitioning and LDC countries (Seitz et al., 2013).

This study is limited by the samples of students from each country that were studying business in English. To obtain a clearer picture of the attitudes towards green computing across the world, this research should be replicated using questionnaires that were translated in the native tongue of each country to enhance understanding. By extending the investigation to other countries we will gain a clearer picture of the consumer behavior towards e-waste and determine the potential for attitudinal change.

References

Akhtar, Raihan (2009), "National Environment Policy of Bangladesh: A Critical Review." Unpublished Master's Dissertation, Institute of Governance Studies, Brac University, Dhaka, Bangladesh.

Arthur, C. (2014), "Smartphone sales pass 1bn in 2013 as China booms", The Guardian, January 29, available at: http://www.theguardian.com/technology/2014/jan/29/smartphone-sales-billion-2013-samsung-apple-china (accessed May 6, 2014).

Cherp, A. (2001), "Environmental assessment in countries in transition: Evolution in a changing context", Journal of Environmental Management, Vol. 62, No. 4, pp. 357-374.

Cooper, T. (2004), "Inadequate life? Evidence of consumer attitudes to product obsolescence", *Journal of Consumer Policy*, Vol. 27, pp. 421-449.

Danciu, V. (2013), "The Contribution of Sustainable Marketing to Sustainable Development", *Management & Marketing: Challenges for the Knowledge Society*, Vol. 8, No. 2, pp. 385-400.

Dreher, K. and Pulver, S. (2008), "Environment as 'High Politics'? Explaining divergence in US and EU hazardous waste export Policies", *Reciel,* Vol. 17, No. 3, pp. 308-320.

Esty, Daniel (2006), "Environmental Performance Index", available at: www.aei.org/files/2006/05/16/20060517_EstyPresentation.pdf (accessed October 12, 2013).

Ionescu, R. (2009), *An Overview of Environmental Law in Romania 2008-2009*, NNDKP, available at: www.wndkp.ro/publications/articles/environment-handbook_ (accessed October 5, 2013).

Katz, D. (1960), "The Functional Approach to the Study of Attitudes", *Public Opinion Quarterly*, Vol. 24, Summer, pp. 163-204.

Laroche, M.A., Bergeron, T. and Barbaro-Forleo, G. (2002), "Cultural differences in environmental knowledge, attitudes, and behaviours of Canadian consumers", *Canadian Journal of Administrative Services,* Vol. 19, No. 3, pp. 267-283.

Liu, Q., Li, K.Q., Zhao, H., Li, G. and Fa, F.Y. (2009), "The global challenge of electronic waste management", *Environmental Science Pollution Research*, Vol. 16, pp. 248-249.

Lucsko, D.N. (2008), "Made to break: technology and obsolescence in America", *Business History Review*, Vol. 82, Summer, pp. 410-412.

McCollough**,** J. (2009), "Factors impacting the demand for repair services of household products: the disappearing repair trades and the throwaway society", *International Journal of Consumer Studies,* Vol. 33, pp. 619-626.

McDougal, G.H. (1993), "The green movement in Canada: implications for marketing strategy", *Journal of International Consumer Marketing*, Vol. 5, pp. 69-87.

Meyers-Levy, J. and Sternthal, B. (1993), "A Two-Factor Explanation of Assimilation and Contrast Effects", *Journal of Marketing Research*, Vol. 30, August, pp. 359-368.

Mihai, O., Seitz, V., Rizkallah, E., Khamas, E. (2013), "Attitudes Toward Green Computing in Transition Economies: A Romanian Perspective", *Academy of Marketing Science Annual Meeting*. *Ideas in Marketing: Finding the New and Polishing the Old*, Monterey, CA, May 16-19.

Nishitani, K. (2010), "Demand for ISO 14001 adoption in the global supply chain: An empirical analysis focusing on environmentally conscious market", *Resource and Energy Economics,* Vol. 32, pp. 395-407.

Rahman, S. (2010), Bangladesh: Parliament strengthens environmental protection legislation, *Library of Congress*, available at: http://www.loc.gov/lawweb/servlet/lloc_news?disp3_ l205402302_text (accessed at December 13, 2013).

Renckens, S. (2008), "Yes, we will! Voluntarism in U.S. e-waste Governance", *Reciel,* Vol. 17, No. 3, pp. 286-299.

Schwepker, C.H. and Cornwell, T.B. (1991), "An Examination of Ecologically Concerned Consumers and Their Intention to Purchase Ecologically Packaged Products", *Journal of Public Policy and Marketing,* Vol. 10, No. 2, pp. 77-101.

Seitz, V., Karant, Y., Yanti, F., Mihai, O. and Rizkallah, E. (2013), "Attitudes Regarding Green Computing: A Step Towards E-Waste Reduction", W*estern Decision Sciences Institute Annual Meeting*, Long Beach, CA, March 18-20.

Seitz, V., Yanti, F. and Karant, Y. (2010), "Attitudes Toward Green Computing in the US: Can They Change?", *Globalization and Higher Education in Economics and Business Administration*, Vol. IV, pp. 318-326.

Unknown author (2007), "Environmental benefits of buying green computers", *The Air Pollution Consultant*, Vol. 17, No. 6, pp. 1.1-1.4.

Yale (2014), "Environmental Performance Index", available at: http://epi.yale.edu/epi (accessed June 12, 2014).